

REMARKS

Applicants appreciate the consideration of the present application afforded by the Examiner. Claims 19-36 were pending prior to the Office Action, with claims 1-18 having previously been canceled. Claims 19, 31, and 35 have been amended through this Reply. Therefore, claims 19-36 remain pending. Claims 19, 31, and 35 are independent. Favorable reconsideration and allowance of the present application are respectfully requested in view of the following remarks.

Claim Rejections - 35 U.S.C. §§ 102 and 103

Claim 19 stands rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Pub. No. 2003/0231161 to Yamaguchi ("Yamaguchi").

Claims 35 and 36 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated over U.S. Pub. No. 2001/0008395 to Yamamoto et al. ("Yamamoto").

In order to establish a *prima facie* case of anticipation under 35 U.S.C. §102, the cited reference must teach or suggest each and every element in the claims. *See M.P.E.P. §2131; M.P.E.P. §706.02*. Accordingly, if the cited reference fails to teach or suggest one or more claimed elements, the rejection is improper and must be withdrawn.

Applicants submit the Examiner has failed to establish a *prima facie* case of anticipation and traverse the rejections under § 102.

Claims 20-22 and 27-30 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yamaguchi in view of U.S. Patent No. 6,188,380 to Kawashima et al. ("Kawashima").

Claim 23 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yamaguchi in view of Yamamoto.

Claims 24-26 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yamaguchi in view of Yamamoto, and further in view of Kawashima.

Claims 31-32 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kawashima in view of Yamaguchi and U.S. Pub. No. 2003/0231158 to Someya et al. ("Someya").

Claims 33-34 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kawashima in view of Yamaguchi and Someya, and further in view of Yamamoto.

For a 35 U.S.C. § 103 rejection to be proper, a *prima facie* case of obviousness must be established. *See M.P.E.P. 2142*. One requirement to establish *prima facie* case of obviousness is that the prior art references, when combined, must teach or suggest all claim limitations. *See M.P.E.P. 2142; M.P.E.P. 706.02(j)*. Thus, if the cited references fail to teach or suggest one or more elements, then the rejection is improper and must be withdrawn.

Applicants submit the Examiner has failed to establish a *prima facie* case of obviousness and traverse the rejections under § 103.

Independent **claim 19** recites a luminance control method comprising, *inter alia*, the features of:

“measuring a luminance of light emitted from the backlight through the liquid crystal panel in a plurality of states where the liquid crystal panel has a predetermined transmittance and the backlight has a different luminance, and preliminarily storing the measured luminance of light emitted through the liquid crystal panel as associated with the luminance of the backlight detected by the luminance detecting unit for each of the plurality of states, respectively; and subsequently

setting a desired luminance set value of light emitted through the liquid crystal panel in a state where the liquid crystal panel has a predetermined transmittance;

calculating a luminance of the backlight to be detected by the luminance detecting unit which results in the set desired luminance set value of light emitted through the liquid crystal panel, on the basis of the preliminarily stored luminance in each state”
(emphasis added)

Applicants respectfully submit that none of the applied references disclose or suggest at least these limitations of the claimed invention.

In a display device, for a desired amount of light to arrive at an eye of a user the luminance of the light emitted by the display device is measured, and the measured value is controlled such that the luminance of the light attains the desired value. In an LCD, in order to measure luminance of a display light intended to arrive at an eye of a user, a photosensor for measuring the luminance of the light emitted through the liquid crystal panel must be provided

externally to the LCD. Such a configuration imposes a burden to the user and also in cost of the display due to the inclusion of the sensor.

An object of the claimed invention is to control a luminance of a display light that arrives at an eye of a user without the use of an external photosensor. To this end, a “*luminance detecting unit for detecting a luminance of the backlight*” is provided. Applicants note that, since light from a backlight is emitted to the user through the liquid crystal panel, a measured luminance value at a photosensor external to the display device is not the same as a measured luminance value of the backlight itself. The difference between these luminance values is attributable to the effects of the transmittance property of the liquid crystal panel at the time the light from the backlight passes through the liquid crystal panel.

Therefore, according to the features of claimed invention, a luminance control method is provided which preliminarily associates a measured luminance value for light having passed through the liquid crystal panel with a measure luminance value of the backlight itself. This preliminary association may be performed, for example, during manufacture of the display device by measuring the luminance of the light emitted through the liquid crystal panel with an external photosensor. However, subsequent to this preliminary association, to provide a desired luminance value for the light emitted through the liquid crystal panel (which would conventionally be measured by an external photosensor), the luminance of the backlight is controlled to be a calculated luminance that results in a desired luminance set value of light being emitted through the liquid crystal panel. This calculated luminance is calculated based on the preliminarily stored luminance association. In other words, a luminance value for the light emitted through the liquid crystal panel is presumed from the measured luminance value of the backlight at the luminance detection unit on the basis of the preliminarily stored association information.

Applicants respectfully submit that Yamaguchi fails to disclose or suggest at least the features of “*preliminarily storing the measured luminance of light emitted through the liquid crystal panel as associated with the luminance of the backlight detected by the luminance detecting unit for each of the plurality of states, respectively*” as recited in independent claim 19. Furthermore, the references likewise fail to disclose or suggest “*calculating a luminance of the*

backlight to be detected by the luminance detecting unit which results in the set desired luminance set value of light emitted through the liquid crystal panel, on the basis of the preliminarily stored luminance in each state.”

Therefore, at least because Yamaguchi fails to teach or suggest each and every claimed element, independent claim 19 is distinguishable from the prior art. Yamamoto, Kawashima, and Someya cannot cure at least the aforementioned deficiencies of Yamaguchi. Dependent claims 20-30 are also distinguishable from the prior art at least due to their dependence from claim 19, directly or indirectly. Accordingly, Applicants respectfully request that the rejection of claims 19-30 under 35 U.S.C. §§ 102(e) and 103(a) be withdrawn.

Independent **claim 31** recites a liquid crystal display device comprising inter alia:

“a luminance detecting unit for detecting a luminance of the backlight;
a first storage unit for preliminarily storing first information in which the luminance detected by the luminance detecting unit, in a plurality of states where the liquid crystal panel has a predetermined transmittance and the backlight has a different luminance, is associated with a luminance of light emitted from the backlight through the liquid crystal panel;

an accepting unit for accepting a desired luminance set value of light emitted through the liquid crystal panel in a state where the liquid crystal panel has a predetermined transmittance;

a first calculating unit for calculating a luminance of the backlight to be detected by the luminance detecting unit which results in the desired luminance set value of light emitted through the liquid crystal panel accepted by the accepting unit, on the basis of the first information preliminarily stored in the first storage unit”(emphasis added).

Applicants respectfully submit that none of the cited references disclose or suggest at least these features at least based on a rationale comparable to that applied above with respect to independent claim 19. Dependent claims 32-34 are also distinguishable from the prior art at least due to their dependence from claim 31, directly or indirectly. Accordingly, Applicants respectfully request that the rejection of claims 31-34 under 35 U.S.C. § 103(a) be withdrawn.

Independent **claim 35** recites a recording medium on which a computer program for causing a computer to output control information to a liquid crystal display device comprises, inter alia, the steps of:

“causing the computer to preliminarily store in a storage unit a luminance of the backlight, in a plurality of states where the backlight has a different luminance, as associated with a luminance of light emitted from the backlight through the liquid crystal panel in each of the plurality of states, respectively;

causing the computer to set a desired luminance set value of light emitted through the liquid crystal panel;

causing the computer to calculate control information for controlling a luminance of the backlight which results in the set luminance set value of light being emitted through the liquid crystal panel, on the basis of first information preliminarily stored in the storage unit” (emphasis added).

Applicants respectfully submit that none of the cited references disclose or suggest at least these features based on at least a rationale comparable to that applied above with respect to independent claim 19. Dependent claim 36 is also distinguishable from the prior art at least due to its dependence from claim 35. Accordingly, Applicants respectfully request that the rejection of claims 35-36 under 35 U.S.C. §§ 102(b) be withdrawn.

CONCLUSION

All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance. Notice of same is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John R. Sanders, Reg. No. 60,166 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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